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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|-----------------------|
| 10/692,116 | 10/23/2003 | Ronald Caudill | 282660-00247 | 6573 |
| 7590 | 03/15/2006 | | EXAMINER | CASTELLANO, STEPHEN J |
| David C. Jenkins Eckert Seamans Cherin & Mellott, LLC 600 Grant Street, 44th Floor Pittsburgh, PA 15219 | | | ART UNIT | PAPER NUMBER |
| | | | 3727 | |

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/692,116 | CAUDILL ET AL. | |
| | Examiner | Art Unit | |
| | Stephen J. Castellano | 3727 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10-23-03.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-9 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldenby in view of Seal et al. (Seal).

Haldenby discloses a gas cylinder comprising a metal shell with a plastic coating of polyethylene is bonded to the inner surface of the shell. Haldenby discloses the invention except for the composite overwrap and the metal of the shell being aluminum. Seal teaches an overwrap disposed about the exterior of an aluminum shell for aerospace or rocket applications. It would have been obvious to add the overwrap to reinforce the shell and make it capable of withstanding higher internal pressures. It would have been obvious to modify the metal of the shell to be aluminum to provide a metal of high strength to weight ratio to make the cylinder lighter for aerospace and rocket applications.

Re claims 2 and 9, see claim 11, line 4 of Haldenby where it states "fusion of the polyethylene to the metal surface to begin."

Re claims 6 and 14, Seal teaches the dimensions for a composite overwrapped pressure vessel in col. 15 lines 14-21 and the volume in col. 15, line 36 of 5000 cubic inches which is within the range. It would have been obvious to provide a volume within the 0.5 to 500 liter range as this range is useful in the aerospace industry as taught by Seal.

Re claims 7 and 15, Seal discloses the overwrap to be a graphite-epoxy composite.

Graphite is carbon.

Re claims 8, 9 and 14-16, the valve is 33 in Haldenby.

Re claim 16, Seal teaches a burst pressure of 9300 psi. in col. 15, line 35. It would have been obvious to modify the structure to contain gas within the 500 to 10000 psi. range as this range is useful in the aerospace industry as taught by Seal.

Claims 3-5 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldenby in view of Seal as applied to claims 2 and 9 above, and further in view of Luttmann et al. (Luttmann).

The combination discloses the invention except for the polyethylene coating isn't a copolymer. Luttmann teaches an interior coating that is a polyethylene copolymer. It would have been obvious to modify the coating to be a polyethylene copolymer in order to get the benefit of another plastic material in addition to the benefit of polyethylene. In the case of Luttmann, the copolymer includes both polyethylene and polypropylene.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Castellano whose telephone number is 571-272-4535. The examiner can normally be reached on M-Th 6:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Newhouse can be reached on 571-272-4544. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Castellano
Stephen J. Castellano
Primary Examiner
Art Unit 3727

sjc